CHAPTER III

Growing Corps of Engineers Involvement

In the first weeks of April, Corps involvement in the cleanup operations grew rapidly. The most significant Corps resources involved in the operations were two dredges. The idea of using dredges in oil recovery operations was not new. In the 1970s Congress discussed equipping vessels for oil recovery as well as dredging but concluded that this would be too expensive. When the Corps designed its dredges in the mid to late 1970s officials discussed outfitting them for oil skimming. A few days after the spill, on 28 March, at a meeting of the National Ocean Pollution Policy Board, Art Hurme from the dredging branch in Corps headquarters informed Dave Barrows of the Office of the Assistant Secretary of the Army for Civil Works and other board members about past discussions.[1]

The next day Assistant Secretary Robert Page informed Alaskan Senators Ted Stevens and Frank Murkowski, Representative Don Young, and Governor Cowper that he had alerted the Corps of Engineers to review its capabilities "anticipating that we may be called upon to assist as part of a federal team." Secretary Page also notified EPA, DOT, the Department of the Interior, and the Federal Emergency Management Agency that the Corps had been monitoring the oil spill situation "in anticipation of being asked to assist in the recovery effort as part of a federal team." The Corps had "vast experience" in emergency response and environmental issues, technical expertise in contracting, and was investigating the use of its seagoing hopper dredge as an oil recovery means. Secretary Page received no response.[2]

On 30 March General Kelly informed the North Pacific Division that Secretary Page had agreed to use a Corps hopper dredge if called upon to assist in the oil spill recovery efforts. He directed NPD immediately to develop a plan of action so that the dredge could respond quickly once given

the word to deploy. The Division was to conduct an on-site investigation with dredge operations personnel to consider the following issues: availability of oil collection boom equipment and ways to use it effectively; availability of oil skimmers which could be used in conjunction with booms; estimated time required to outfit the dredge; estimated travel time to Prince William Sound; and estimated mobilization costs and daily rental costs. "It is particularly important," General Kelly explained, "that we have laid all the necessary groundwork to respond rapidly and effectively should the Corps be called upon to respond."[3]

Specifically, Corps officials considered using two dredges based in Portland: the *Yaquina*, which had come out of dry dock a few weeks earlier, and the *Essayons*, which was scheduled to begin work in San Francisco. The two dredges normally help maintain adequate navigation depths in river channels and harbors on the coasts of Alaska, California, Oregon, Washington, and Hawaii. Crews remove silt and sand off the channel bottom, move it into the hoppers, and later off-load it into a disposal site. Neither dredge had ever been used to recover spilled oil.

The *Essayons*, constructed in 1982, was the larger of the two dredges: 350 feet long with a 68-foot beam and a hopper capacity of 6,000 cubic yards. It had four dredge pumps: one 1,650 horsepower mounted on each dragarm and two 1,500 horsepower pumps mounted in the hull. The dredge could carry 26,000 barrels (over 1 million gallons) in its hopper and travel at 13.5 knots an hour fully loaded. The *Yaquina*, built in 1981, was 200 feet long and 58 feet wide with a capacity of 875 cubic yards and could carry 4,000 barrels (168,000 gallons). Both dredges were highly maneuverable, and the *Yaquina*, with its shallow draft, functioned well in small inlets. Each dredge had two dragarms used to suck up the dredge material. The pump horsepower per dragarm was 1,650 for the *Essayons* and 565 for the *Yaquina*. The *Essayons* pumped at a rate of 30,300 gallons a minute and the *Yaquina* at a rate of 5,454 gallons a minute.

The *Essayons* had just reached the Oregon–California border on its way from Astoria to San Francisco on 29 March when General Stevens ordered it to turn around. It returned to Astoria at 5:00 P.M. the next day. After being informed

that the *Essayons*' services would not be needed, however, General Stevens directed the dredge to return to San Francisco for dredging operations.[4]

Meanwhile Portland District staff went into action to prepare for a possible oil cleanup assignment. On 31 March Leroy Johnson from Portland District and Ron Henry, Master of the *Essayons*, traveled to Valdez to gather information and coordinate with cleanup officials. There they contacted the leader of the Coast Guard strike team as well as the head of Exxon operations in Valdez. Ken Patterson, Chief, Navigation Branch, Portland District, and his staff contacted contractors in Portland, San Francisco, and Seattle who were in the oil spill business to find out what they needed for oil cleanup operations. Without a formal mission, however, they did not have authority to make commitments to contractors, and when they later received word to send the dredges they found that most of the suppliers that they had contacted earlier had already shipped their equipment to Alaska.[5]

As Portland District staff struggled to locate supplies and equipment, officials in Alaska and in Washington, D.C., moved closer to a decision about sending the dredges. The decision was political as well as operational. Pentagon officials justified sending dredges on the purely functional lines of providing communications and command and control in a remote, harsh environment. They contended that their prime motive was a sense of responsibility. The President had indicated his desire for the Defense Department to become involved, and Pentagon officials felt a responsibility to take action. Yet, it should also be noted that the White House was under pressure from the media and Alaska's congressional delegation to take bold action and commit DOD resources, and Pentagon officials felt this pressure. As General Stevens explained, it was "very inviting to consider using Corps dredges to provide visibility of presidential support for the cleanup effort and getting valuable experience for possible future missions."[6]

As days passed after the President's press announcement and no major requests came from the Coast Guard, Generals Smith and Kelly became anxious. Smith had set up the joint staff at the Pentagon, designated General McInerney as the Defense Senior Representative, and made a number of trips

to the White House. He had set everything in motion to provide support. The Secretary of the Army had even given General Smith permission to issue warning orders on equipment that might be needed soon, such as Navy berthing vessels and Corps dredges. When Smith asked Coast Guard officials where the request for the berthing vessel was, they indicated that they did not want to request the ship because of the expense. Nor were they willing to pay for Corps dredges at that point. Smith and Kelly went back to the Secretary of the Army and the Secretary of Defense and explained that they were not getting any requests. They argued that the Defense Department should mobilize whether the Coast Guard made a request or not. Secretary Cheney agreed, and he directed General Smith to send the ships to Alaska. Smith observed that none of the dredges' success would have occurred if the military had not forced the issue. "As it turned out," he concluded, "it was a good decision." Admiral Robbins also acknowledged that if not for the political push, no one would have discovered the dredges' capabilities.[7]

Meanwhile in Alaska, DOMS team members discussed possible use of Corps dredges with General McInerney and with Coast Guard officials. John Elmore discussed the use of the *Yaquina* with Admiral Nelson. Elmore believed the dredge would be useful because it could chase the oil, boom it, pump it, put it in the hoppers, and off-load it. Although it had never been used to recover oil, Elmore said, "all the basic factors were there to make the machine work." On 12 April General McInerney requested the *Yaquina* and Nelson concurred. The AK-JTF sent the request to DOMS, and DOMS dispatched the message to the Corps.[8]

Since the dredges had never been used in oil recovery before, some Alaska District officials were not as confident about the potential contributions as Elmore, but once the decision was made they responded enthusiastically. Hopman and Elmore convinced Colonel Kakel that the vessels could be used as floating platforms and berthing ships if for nothing else.[9]

While officials debated the use of the dredges, General Stevens put the *Yaquina* on standby. On Friday, 7 April, word came to have the *Yaquina* ready to leave Portland at 8:00 A.M. on Monday, 10 April. Portland District staff quickly

Army Corps of Engineers dredge Yaquina *in Alaska.*

fitted the dredge with a thirty-day supply of fuel, rations, and water as well as 36-inch oil containment boom (the only kind available in Portland), absorbent pads and rolls, extra sleeping bags, extra foul weather and cold weather gear, heating coils, and steam hoses to keep the dredge clean. They stacked roughly two thousand yards of yellow rubber oil boom on the deck and placed on board petroleum products and repair parts needed for extended operations without support.

Portland District staff rented additional equipment necessary to support the operation including an air compressor and a three-inch submersible and a three-inch diaphragm pump. They fastened on the deck of the *Yaquina* a 34 foot by 10 foot belt-driven inland Marco skimmer rented from ChemPro Environmental Services in Seattle. This Marco skimmer was a standard skimmer design for oil recovery, but it would not be very effective because of the viscosity of the oil. The small pump on board the skimmer used to move materials from a collection tank to a larger holding tank was incapable of moving the thick oil. District personnel also placed on board a small survey vessel (survey boat 205) that had electronic positioning capability as well as normal

fathometers for hydrosurvey, but ultimately no hydrosurvey was required. They would supply both dredges with charts of the areas where they expected the dredges to work. They placed cold weather gear on board but were unable to locate the necessary exposure/flotation suits for either dredge.[10]

After a frenzied weekend of preparation, the dredge was ready. On 11 April DOMS informed Corps headquarters that the Coast Guard had requested the assistance of the *Yaquina* and directed the dredge to leave Portland for Valdez as quickly as possible. Upon arrival the captain was to report to the FOSC. After thirty hours of waiting, the crew departed for Alaska at 7:00 P.M. on 11 April. Late that night Charles W. Hummer, Chief of Dredging, HQUSACE, commended Ken Patterson and his staff: "You have done a superb job of being ready and also to arrive and make a difference." Early the next morning the dredge crossed the Columbia River bar into the Pacific Ocean, two hours behind schedule because of fog. Rough weather in the Gulf of Alaska forced the *Yaquina* to take the inside passage route, which added a day to her transit time.[11]

When the *Yaquina* left Portland it carried, in addition to its normal crew of twenty-two, a public affairs specialist, a safety officer to insure that there were no accidents related to handling the oil, two contractors for the skimmer, two for the survey boat crew, and one radio operator, for a total of twenty-nine. After arrival the crew would be augmented with a photographer and a wildlife biologist (Eric Braun).

Portland District Engineer Colonel Charles A. Cowan had organized Task Force Castle and assigned a young, energetic Army captain, Kevin Brice, who was deputy project manager for the Dredge and Plant Project in Portland District, as Task Force Commander to coordinate the dredges and insure that they were prepared to do what was needed. Cowan anticipated that Brice would handle the expected VIP visits, serve as liaison with Coast Guard and Exxon representatives, and coordinate with the command post on the ground. Brice met the dredge crew in Alaska.[12]

After the *Yaquina* departed, General Kelly placed the *Essayons* on standby for possible deployment to Alaska. Patterson initiated plans to lease and purchase equipment for the *Essayons* and to deliver it to Astoria where the

Essayons would change crews and take on fuel and stores.[13] Once again Portland District staff worked around the clock to procure pumps, hoses, cleanup gear, absorbent pads, chemicals, and fire protection equipment. They sent all of this material by truck to Astoria where it could be loaded on the *Essayons* when it arrived. Two trucks from Seattle brought an oil skimmer and booms to load, along with personnel to operate the skimmer. They ended up with a pile of support gear on the dock half as long as the ship and almost as wide.

On 13 April General Kelly directed that the *Essayons* be staged forward to Astoria and immediately provisioned and equipped for a possible mission in Alaska. The dredge left San Francisco that night. The next day General Kelly sent the following message: "Once the *Essayons* has arrived in Astoria, Oregon, she is to be immediately provisioned, equipped and sailed immediately to Seal Rock, Prince William Sound, Alaska, for use in oil spill cleanup and other duties to be determined upon arrival."[14]

Meanwhile, in Alaska, Elmore informed General McInerney that the *Essayons* had been staged forward and would be held at Astoria. McInerney responded that as long as the *Essayons* was that far forward, he would recommend bringing her to Alaska. On 14 April DOMS sent a message requesting the Corps to prepare the *Essayons* for "likely" deployment to Alaska. That same day in a videoteleconference between DOMS and AK-JTF, General McInerney requested that the *Essayons* be sent along with two Navy berthing ships. The *Essayons* left Astoria for Alaska early the morning of 17 April, its exact mission still undetermined. Weather conditions were good, and it made better time than the *Yaquina*.[15]

Coast Guard and Exxon officials, however, were not convinced that the dredges would be useful and felt the ships were being forced on them. Exxon was reluctant to enlist unproven equipment, and Coast Guard officials were afraid that if they brought the dredge up, Exxon would not pay for it. As the *Yaquina* headed toward Alaska, tension mounted. On 15 April, Otto R. Harrison, General Manager, Exxon Company, U.S.A., the Exxon official in charge at Valdez, informed Admiral Yost that at the current stage of Prince William Sound water surface oil recovery, "there is no use for these

vessels." The amount of surface oil in the Sound decreased daily. Nor were the Corps vessels needed in offshore Gulf of Alaska operations, he added.[16]

The reluctance of Coast Guard and Exxon officials to request the dredges is understandable. Cleanup managers at Valdez could see no use for the dredges. They had never been used or equipped for oil recovery, so they were not listed in the emergency oil spill manuals that Exxon and USCG operators consulted. Yet, the manuals did list a Soviet vessel, the *Vaydaghubsky*, which was equipped as a skimmer. At the recommendation of the Coast Guard, Exxon had already arranged for the use of the *Vaydaghubsky*, and it was on its way to Alaska. The *Vaydaghubsky*, built in 1984 at the Finnish shipyard Wartsila, was a special purpose vessel capable of carrying out hopper dredging, fire fighting, oil spill cleanup, and sewage disposal from offshore platforms. It was 425 feet long (compared to Navy skimmers that were 36 feet long) and reportedly could work in winds up to 30 knots and seas up to 8 feet.[17]

On 16 April Captain Brice, Robert Hopman, and other Corps officials went to Valdez to meet with Coast Guard representatives to define the dredge missions and to coordinate crew changes, communication and reporting requirements, and resupply needs. Their reception was chilly. Coast Guard representatives bluntly asked what the dredges could do and referred to Harrison's letter saying that Exxon did not want the dredges. After responding as diplomatically as possible that he was not sure exactly what the dredges could do, Brice proceeded to outline possible dredge activities, from collecting oil to serving as a command ship. There was apparently some confusion. Coast Guard officials seemed to have the impression that the dredges had been refitted for oil skimming and that they had high seas oil skimming capability. The DOMS team had apparently described the *Yaquina* as having "high seas" skimming capability. No one at the 16 April meeting, however, made that claim.[18]

When word that the dredge capabilities were unclear went up through Coast Guard channels, Coast Guard officials became upset that they did not have the super ocean-going skimmer that they said they were promised. The FOSC complained to DOMS that the assessment team had presented

the *Yaquina* as having "high seas skimming capability," when the 16 April meeting revealed little or no skimming capability. The FOSC reminded DOMS that Exxon had "firmly declined" the use of the dredges and said there was no need for them in the Prince William Sound recovery operations. Moreover no Coast Guard or Clean Water Act 311(k) funds were available to pay for them. The FOSC requested more information on the *Essayons*' cleanup capability before it sailed and requested that the *Yaquina* proceed to Valdez for an assessment of its oil spill cleanup capabilities.[19] In response to the USCG message, Corps dredging personnel prepared a white paper outlining Corps dredge capabilities. General Kelly also sent Charles Hummer to Alaska to help make the dredge operational. The potential contribution of the dredge, Kelly explained, was "too important a thing to risk." Specifically, he directed Hummer to assess the Corps' current role in the cleanup, help Colonel Kakel use the two dredges in oil recovery operations, and assess other potential Corps support. Hummer arrived in Anchorage on 18 April where he met with Colonel Kakel and his staff.[20]

DOMS responded to the Coast Guard with a message on 18 April indicating that both dredges could skim in waves of up to three feet and retain skimmed material (*Essayons*, 26,000 BBLs; *Yaquina*, 4,000 BBLs). Each vessel had command capability and could function as a repository for skimmed oil from other vessels.[21] A message from Captain Brice to Ted Hunt, the captain of the *Yaquina*, late on 17 April indicated the level of tension. Brice asked Hunt and his crew to find a way to pump oil from skimmers into the dredge hoppers; normal pumps were not working. He warned, "The climate up here is very political! Please be very, very cautious in your transmissions and discussions. The politics is on the Washington, D.C. level. Exxon does not want the dredges in Alaska. The dredges are being forced on the USCG by DOD."[22]

It was into this highly charged political environment that the dredge sailed. At 3:45 P.M. on April 18 the *Yaquina* arrived off Eleanor Point in Prince William Sound. A Coast Guard inspector boarded the dredge to evaluate its capabilities. He and Captain Hunt discussed skimming operations and berthing. Captain Brice and Robert Hopman, who had

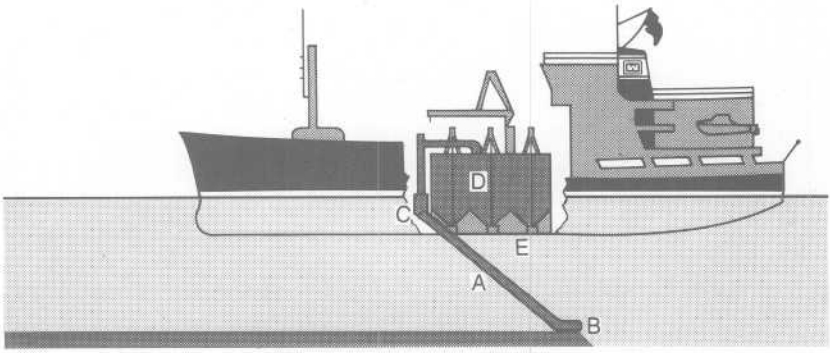
flown from Anchorage, were also on board. They invited the Exxon representative on site to use the dredge as his command post. Brice and Hopman told the crew that their mission was to "suck oil," enough oil to "make a difference." The crew was somewhat apprehensive because they were not sure they could recover oil, but they were optimistic and eager to find a way. After this initial meeting, the FOSC sent a message saying the dredge would be "most helpful" in the operations.[23]

The crew launched their skimmer and survey boat early the next morning and the launch followed. The launch and the survey boat dragged boom in a "v" formation away from the skimmer. At 7:45 A.M. the *Yaquina* edged into position close to two fishing boats that had a boom full of oil, the *Towhee* and the *Tres Suertes*. The two boats maneuvered their "donut" into position next to the dredge. To test the consistency of the oil, a bucket attached to a rope was thrown overboard. The bucket sat on top of the oil. The thick "mousse" was ten inches deep inside the boom and filled with debris and seaweed.

The crew first tried the centrifugal pump that they had brought to move oil into the hopper, but it worked too slowly. Their concrete pump also failed. The only thing left was the dredge pumps themselves. The crew did not know if this would damage the pumps and dragarms or how to adapt the dragarms to make it work. If the draghead sat too low in the water it sucked too little oil and too much water. If it sat too high on the water it would suck air and lose prime.

After tense hours of brainstorming and experimentation, at the suggestion of Chief Mate Jimmy Holcroft, crew members inverted the draghead. Around 4:00 P.M., workers cheered as they began sucking up as much oil in seconds as they had all day. In the first fifteen minutes using the inverted draghead, the dredge took an estimated 1,500 barrels of oil (63,000 gallons) into the hoppers. As it turned out, oil collecting was not very different from dredging. One captain called it "mirror image dredging" because the dragheads were inverted to suck oil from the top of the water instead of silt from the bottom.

With this remarkable success, Coast Guard and Exxon officials and others revised their assessment of the dredge



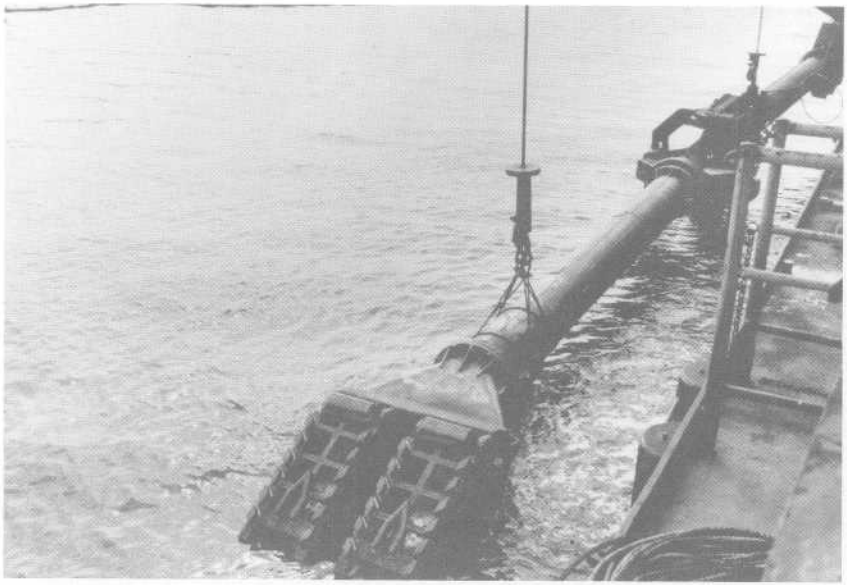
Typical Hopper Dredge Components: *Hopper dredges are seagoing vessels designed to dredge and transport dredged material to open-water disposal areas. The working of a hopper dredge is similar to that of a home vacuum cleaner.*

Dragarms (A) with dragheads (B) extend from each side of the ship's hull. The dragheads are lowered to the channel bottom and slowly pulled over the area to be dredged. Pumps (C) create suction in the dragarm and the silt or sand is drawn up through the arms and deposited in hopper bins (D) in the vessel's midsection. When the bins are full, the dredge sails to the designated disposal area and empties the dredged material through large hopper doors (E) in the bottom of the hull.

Hydrographic survey boats, using sophisticated electronic equipment, survey the river and harbor bottoms to determine if dredging is required and, after dredging is completed, to insure that the desired channel depths have been attained.

capabilities. General Kelly called their success a "miracle." It set the tone for the Corps' oil recovery mission. Colonel Kakel must have been particularly gratified because of the skepticism he had faced. In the face of stern questioning early that morning at a Joint Task Force briefing, he had been forced to admit his uncertainty about the dredge's capability. The Corps was now vindicated.[24]

On 19 April DOMS sent a message to the Corps directing the *Essayons* to depart immediately for Valdez and to contact the Coast Guard there for instructions. When the *Essayons* arrived in Alaska, the Coast Guard denied the Corps' request for the dredge to join the *Yaquina* long enough to witness the inverted dragarm technique, so the *Yaquina* crew explained the procedure by radio. Later Captain Brice "hitchhiked" to the *Essayons* to explain the procedures in person. The procedure, however, would be more difficult to implement in the Gulf of Alaska, where the *Essayons* would



Dragheads on the U.S. Army Corps of Engineers dredges were turned upside down to suck oil out of "donuts," or circles made of boom material. Normally, the dragheads dredge or "vacuum" sand from the bottoms of river and harbor navigation channels, primarily along the West Coast. The Yaquina, *the first of the two dredges to reach the spill, tried pulling in oil with the draghead in its normal, bottom-vacuuming position, but pulled in too much water in proportion to the oil pumped aboard. Crew members turned the draghead upside down to suck the oil from the surface of the water. That relatively simple innovation quickly and efficiently turned the hopper dredges from bottom-dredging vessels into oil-hungry pumpers.*

work, than in Prince William Sound because the high waves made it harder to hold the dragarms in the proper position.[25]

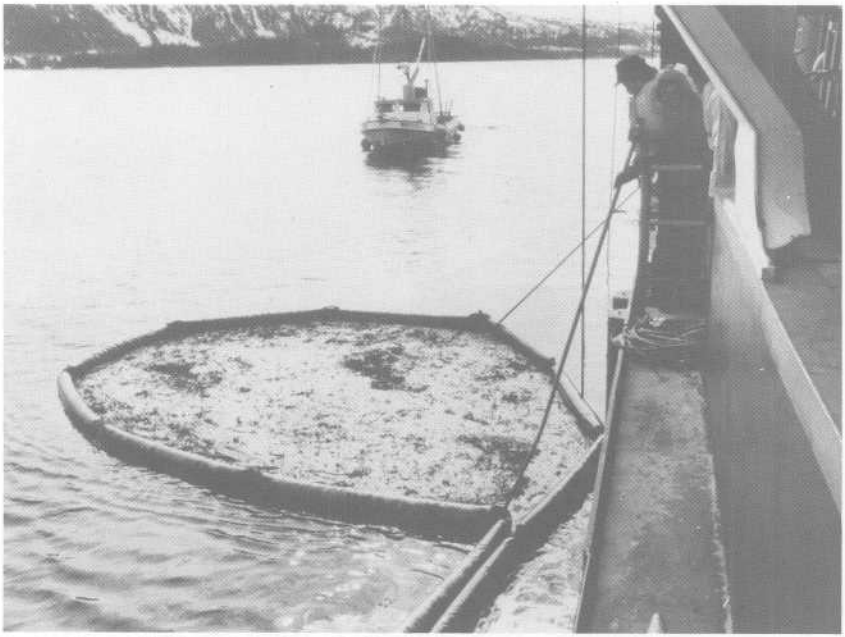
On 20 April Kakel, Miguel Jimenez, Captain of the *Yaquina*, Kirk Shadrick, and Hummer traveled by float plane and boarded the dredge to see the *Yaquina* in operation. They met with Hopman, Brice, Captain Hunt, Exxon representatives, and Coast Guard representatives to review the previous day's successes and to plan for the future. There was no more work in the immediate area of Perry Passage, so around 4:30 P.M. the dredge moved toward Hidden Bay to meet boats with boomed oil. There Captain Jimenez and his crew adopted new booming procedures. Instead of simply pulling in the oil collected by the two boats, one end of the 610-foot boom was tied to the *Yaquina*. One boat kept the other end out in front of the dredge and collected oil, using the dredge as a boom

Oil skimming operations in Prince William Sound.

ship. The oil was pumped into the hopper and the boom stayed attached to the dredge. Other boom boats in the area pulled their loads toward the *Yaquina* and released their oil into the giant boom created by the *Tres Suertes* and the *Yaquina*. At the end of the day the hopper held 1,100 barrels of oil. After the water decanted, the crew refigured the amount gathered on 19 April at roughly 500 barrels plus 600 collected on 20 April.[26]

The dredges quickly provided other support too. They loaned boom to smaller vessels and provided those crews with hot meals and showers and fresh water.[27]

As the dredges began to carve out their role in Alaska, the Corps of Engineers also became involved in contingency planning. While an anxious President and nation waited to see if Exxon would remain committed to effective cleanup operations, Corps personnel became more deeply involved in planning for the possibility that DOD and the Corps might assume a much larger role in the cleanup operations. Senior officials in the White House and the Pentagon needed reliable information that they could use to weigh options and make decisions about future actions. As DOD poured resources into Alaska in response to FOSC and Exxon requests, it prepared



In Prince William Sound, and off Kodiak Island and the Alaskan Peninsula, oil collected by small skimmers and fishing boats was contained in circles of boom material nicknamed "donuts." The oil collected in donuts such as this one was then pumped aboard two Corps dredges, the Essayons *and the* Yaquina, *where the oil was stored in the dredge hoppers until it could be off-loaded into barges. Neither dredge was equipped to work with oil, and both had to modify the dragheads by reversing them to pull in oil from the surface of the water instead of using them in the traditional way by vacuuming up from a channel bottom.*

for the contingency that it might be called upon to take over all or part of the cleanup if Exxon failed to meet its obligations. The Corps of Engineers, with its extensive engineering, construction, and contracting capabilities, played a major role in the contingency planning.

In the first weeks of April, Secretary Skinner, Secretary Cheney, Secretary Marsh, Admiral Yost, General Smith, and General Kelly held meetings in Washington to discuss Defense Department activities. At a White House meeting Kelly and Smith laid out a plan for the way DOD would approach the cleanup problem if it received the mission. At one point, they recalled, they were down on their knees at the coffee table in Governor Sununu's office spreading out their charts and maps and explaining how DOD would

conduct the cleanup operations. Both White House and Pentagon officials were committed to keeping Exxon as a player. If Exxon backed out, however, DOD would be ready to step in with a plan that Sununu had approved.[28]

In addition to the White House meetings, there was a series of teleconferences between Secretary Marsh, Addington, Breeden, Smith, and occasionally other officials in the Pentagon and General McInerney, Colonel Wilson, and Colonel Kakel in Alaska to discuss contingency plans for increased DOD involvement. During one teleconference Addington passed a note to General Kelly indicating that DOD and the Corps should be prepared to act. The Corps did not want to "come up short," as Kelly put it, if that happened.[29]

The Corps involved the Coast Guard in the planning process. A Coast Guard representative, Commander David Pascoe, came to Corps headquarters and reviewed a draft plan. Generals Kelly and Smith also met with Commandant Yost and Rear Admiral Joel D. Sipes, Chief, Office of Marine Safety, Security and Environmental Protection, around a table in Coast Guard headquarters in Washington to discuss the potential role of the Army.[30]

At a 21 April briefing, officials presented the White House with the outline of a proposed DOD contingency plan for the oil spill. DOMS, in turn, requested that AK-JTF use that outline to develop a detailed contingency plan for an increased DOD role in the cleanup and coordinate those sections related to the private sector with Alaska District. The next day the Joint Task Force initiated a contingency plan as directed.[31]

Part of the contingency planning involved determining the extent of the damage, the type of beaches affected, and the problems involved. Using this information, the Corps would then plan its response; i.e., equipment, manpower, and schedule. The Corps looked at how much of the work Exxon would retain and how much the government would take, the availability of contractors, safety and health measures, and ways to feed and house workers. It pulled all of these factors together in contingency plans that were briefed at the White House.

Most of the actual planning work fell to North Pacific Division and Alaska District. General Stevens' task force coordinated between Alaska District and headquarters. The

District and the Division supplied each other with such information as estimates of the number of miles of contaminated shoreline, discussed each other's estimates, and reached a consensus. District and Division staff continually grappled with the question of whether the Corps could be any more successful than Exxon given the restrictions on shoreline cleanup. They were also concerned that the Corps might not be able to provide adequate equipment and housing for workers.

HQUSACE requested cost, manpower, and logistics estimates daily. The responses were "best guesses" based on limited and sketchy information. For example, when asked to determine how much money, manpower, or time it would take to clear the shoreline, no one in the Coast Guard, Joint Task Force, or Alaska District had a clear definition of "clean" or an accurate assessment of the length of time it would take to reach "clean." NPD and NPA relied on Exxon reports and their own site visits for their figures and worried that officials in Washington would represent their numbers as fact rather than as their best guess. Colonel Kakel asked Colonel Wilson to remind DOMS that the estimates were based on assumptions and should not be used as positive indicators of later performance. He cautioned against reaching decisions based on miles of shoreline, slope of beach, and work rates.[32]

The requests for contingency plans occasionally frustrated District staff, who did not understand the decisions or motives at higher levels in the Corps or have a full picture of what was going on. The contingency planning between mid-April and mid-May went through three phases for Alaska District — the original engineering plan, the engineering annex to the JTF plan, and finally plan refinement and an analysis of Exxon's plans and procedures. In the first phase the District worked on the Corps' Engineer Task Force (ETF) operations plan. The task was difficult because the District had no reliable information on the amount of shoreline to be cleaned, quantity of oil to be removed, exact location of oil, funding, proven techniques for oil spill cleanup, or command and control organization.

In phase two the focus of the planning shifted from directing the oil spill cleanup to a support role for JTF, but the JTF did provide a mission statement to Alaska District. The

roles of the Navy, Air Force, Army, and NPA were not clearly defined. NPA was not sure whether JTF would get the mission to clean the entire spill area or just designated zones. Over time the mission was limited to designated zones and the role was more clearly defined. The ETF Plan of Operations (OpPlan) became an appendix to the JTF OpPlan.

If implemented, the contingency plan would have created an Engineer Task Force to provide open water and shoreline cleanup in a sector of the spill area. The ETF's mission would have been to contain and recover spilled oil, clean oil from the shoreline, protect sensitive areas from further damage, and restore the affected environment. The concept for operation was for ETF to provide command and control, contract administration, and coordination for shoreline and open water cleanup under the leadership of AK-JTF. The plan provided for extensive use of contractors and local labor and use of military resources for specific purposes to augment the contractor effort as necessary. The plan included an operating plan with a timeline for shoreline cleanup, floating oil recovery, contracting, and research and development. It also included plans for public affairs, service support, personnel requirements, and command relationships.

Because of the time constrictions, the plan required cost plus contracts that the Corps does not normally use. Contracts would have been negotiated on a cost plus profit basis. Under this type of contract there are no controls on the cost. The contingency plan called for five large contracts: three options for beach cleanup, one for hiring dredges, and one for waterborne cleanup.[33]

In addition to work on the OpPlan, the JTF asked the Corps to do technical assessments of Exxon's cleanup plan. With the possibility of greater federal involvement, the JTF wanted a government assessment of the effectiveness of Exxon's approach. The JTF requested an analysis of Exxon labor required on the shoreline. In response Alaska District developed a paper entitled "Shoreline Cleanup Analysis."

General McInerney asked Colonel Kakel to provide him with an assessment of effective shoreline cleanup methodologies. He also wanted to know what role the Corps dredges might play in this cleanup or techniques the dredges could apply on their own. He was especially interested in knowing

the practicability of dumping large amounts of hot water on the oiled shorelines. McInerney wanted all of this information tempered with what the Shoreline Priority Committee had reviewed up to that time, and how they were making their decisions about what shoreline cleanup methods to allow. Colonel Kakel asked James Reese and Jake Redlinger from NPD to respond to this tasking. North Pacific Division submitted three sets of papers: one on the use of dredges in shoreline cleanup, one on hot water flushing systems to clean shoreline, and a paper on other shoreline cleanup techniques written by scientists at the Waterways Experiment Station.[34]

Although DOD never received responsibility for the cleanup and the contingency plans were not activated, Corps personnel learned from the process. After they submitted their contingency plans, they continued to refine their estimates as more information became available. Their estimate of miles of contaminated shoreline was close to what the number actually turned out to be — roughly 1,500 miles.[35]

In the first weeks of April, then, the Corps searched for ways that it could contribute to the cleanup effort. No one knew with certainty how to equip the dredges for oil recovery or if they could function as oil skimmers, but officials were eager to respond to the President's call. This same desire to respond and to be prepared for a possible expanded role led to weeks of frenzied contingency planning. The value of the dredges was quickly apparent, but assessing the value that the information provided in the contingency plans had for decision makers in the Pentagon and White House is more difficult.